



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,427	11/30/2001	Roberto L. Quoiani	FMCE-P073	5491

7590 05/16/2005
Henry C. Query, Jr.
504 S. Pierce Avenue
Wheaton, IL 60187

EXAMINER

PICKARD, ALISON K

ART UNIT PAPER NUMBER

3676

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/010,427

Applicant(s)

QUOIANI, ROBERTO L.

Examiner

Alison K. Pickard

Art Unit

3676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,7-9,14-18 and 20-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,7-9,14-18 and 20-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 7-9, 14, 15, 18, and 20-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duncan (5,735,344) in view of Rogen.

Duncan discloses a metallic seal component 29 (see title) in a bore having an undercut recess (seen best in Figure 2). The seal seals between an inner tube 14 and outer tube 11. The annular ring has first 31 and second 32 axially extending legs joined by a base. The legs comprise bumps 35 to engage the recess and other tube member. An annular member or energizing mandrel 41 is attached to the legs. As seen in the figure, the tip of the mandrel is less than or equal to the width of the gap between the legs. Duncan does not disclose that the metal seal or the mandrel is comprised of a shape memory alloy. Rogen teaches a metallic seal component in a bore. Rogen teaches the seal and the energizing mandrel are made from a shape memory alloy (NiTi). Rogen teaches the use of this material to provide a recoverable and reusable seal. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to make the seal and mandrel from shape memory alloy as taught by Rogen to provide a recoverable and reusable seal.

3. Claims 1, 3, 4, 7-9, 14-18, 20-22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCrone (4,658,847) in view of Rogen.

McCrone discloses a bi-metallic seal component 10 in a bore having an undercut recess 38. The seal seals between an inner tube 14 and outer tube 26. The seal has a u-shape cross-section (and can be considered tubular) with first (near 15) and second (near 17) axially extending legs joined by a base. Inside layer 18 can be considered an energizing mandrel or a backup spring. Portion 30 could also be the backup spring. While McCrone discloses that the seal 10 expands upon being heated to form a metal-to-metal seal, McCrone does not disclose that the seal comprises shape memory alloy (such as those listed in Claim 9). Rogen teaches a metallic seal component in a bore. Rogen teaches the seal (and an energizing mandrel) are made from a shape memory alloy (NiTi). Rogen teaches the use of this material to provide a recoverable and reusable seal. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to make the seal (and mandrel) from shape memory alloy as taught by Rogen to provide a recoverable and reusable seal.

Response to Arguments

4. Applicant's arguments filed 3-1-05 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Rogen teaches the use of shape memory alloys in sealing assemblies to provide a

Art Unit: 3676

recoverable and reusable seal. The examiner acknowledges that Duncan's seal 29 is recoverable. However, Duncan's seal 29 is destroyed and cannot be reused. Rogen's seal is made of a shape memory alloy so it can be reused. Shape memory alloys are known for their ability of switching between a deformed shaped and pre-deformed shape upon application and removal of an actuator, such as heat. Rogen column 5, lines 9-15 give an example of this characteristic. The examiner disagrees with Applicant's argument that Rogen is not concerned with reusing the seal. Column 13, lines 40-53 teach a recovery method that does not destroy the seal (also see claim 2).

Applicant argues that McCrone does not disclose an undercut recess in a bore. The examiner disagrees. Figure 5 (top portion) clearly shows the seal in a recess of a bore.

Applicant has not provided any other reasons why the combination of Rogen and McCrone would not render claims 1 and 21 obvious.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 3676

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alison K. Pickard whose telephone number is 571-272-7062.

The examiner can normally be reached on M-F (10-7:30), with alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Shackelford can be reached on 571-272-7049. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alison K. Pickard
Primary Examiner
Art Unit 3676

AP